fraction do not normally express the $GABA_BR1/R2$ receptor, with the compound under conditions suitable for binding, and detecting specific binding of the chemical compound to the $GABA_BR1/R2$ receptor or membrane fraction.--

--191. (New) The process of claim 190, wherein the $GABA_BR1/R2$ receptor comprises a $GABA_BR2$ polypeptide which has the same amino acid sequence as that encoded by the plasmid BO-55 (ATCC Accession No. 209104).--

--192. (New) The process of claim 190, wherein the $GABA_BR1/R2$ receptor comprises a $GABA_BR2$ polypeptide which has the same amino acid sequence as that shown in Figures 23A-23D (Seq. ID No. 47).--

--193. (New) The process of claims 190, wherein the $GABA_BR1/R2$ receptor comprises a $GABA_BR2$ polypeptide which has the same amino acid sequence as that encoded by the plasmid pEXJT3T7-hGABAB2(ATCC Accession No. 203515).--

--194. (New) A process of claim 190, wherein the cell is an insect cell or a mammalian cell.--

--195. (New) A process of claim 194, wherein the mammalian cell is nonneuronal in origin.--

--196. (New) A process of claim 195, wherein the nonneuronal cell is a COS-7 cell, 293 human embryonic kidney cell, a CHO cell, a NIH-3T3 cell a mouse Y1 cell or LM(tk-) cell.--

--197. (New) A process involving competitive binding for identifying a chemical compound which specifically binds to a mammalian $GABA_BR1/R2$ receptor which

comprises separately contacting cells expressing on their cell surface the $GABA_BR1/R2$ receptor or a membrane fraction from such cells, wherein such cells or membrane fraction do not normally express the $GABA_BR1/R2$ receptor, with both the chemical compound and a second chemical compound known to bind to the receptor, and with only the second chemical compound, under conditions suitable for binding of both compounds, and detecting specific binding of the chemical compound to the $GABA_BR1/R2$ receptor, a decrease in the binding of the second chemical compound to the $GABA_BR1/R2$ receptor in the presence of the chemical compound indicating that the chemical compound binds to the $GABA_BR1/R2$ receptor or membrane fraction.--

--198. (New) The process of claim 197, wherein the $GABA_BR1/R2$ receptor comprises a $GABA_BR2$ polypeptide which has the same amino acid sequence as that encoded by plasmid BO-55 (ATCC Accession No. 209104).--

--199. (New) The process of claim 197, wherein the $GABA_BR1/R2$ receptor comprises a $GABA_BR2$ polypeptide which has the same amino acid sequence as that shown in Figures 23A-23D (Seq. ID No. 47).--

--200. (New) The process of claim 197, wherein the $GABA_BR1/R2$ receptor comprises a $GABA_BR2$ polypeptide which has the same amino acid sequence as that encoded by plasmid pEXJT3T7-hGABAB2 (ATCC Accession No. 203515). --

--201. (New) The process of claim 197, wherein the cell is an insect cell or a mammalian cell.--

--202. (New) The process of claim 201, wherein the mammalian

cell is nonneuronal in origin.--

--203. (New) The process of claim 202, wherein the nonneuronal cell is a COS-7 cell, 293 human embryonic kidney cell, a CHO cell, a NIH-3T3 cell a mouse Y1 cell or LM(tk-) cell.--

--204. (New) A method of screening a plurality of chemical compounds not known to bind to a mammalian $GABA_BR1/R2$ receptor to identify a compound which specifically binds to the $GABA_BR1/R2$ receptor, which comprises

(a) contacting cells containing nucleic acid encoding and expressing on their cell surface the $GABA_BR1/R2$ receptor or a membrane fraction from such cells, wherein such cells or membrane fraction do not normally express the $GABA_BR1/R2$ receptor, with a compound known to bind specifically to the $GABA_BR1/R2$ receptor;

(b) contacting the same cells or membrane fraction as in step (a) with the plurality of compounds not known to bind specifically to the $GABA_BR1/R2$ receptor, under conditions permitting binding of compounds known to bind the $GABA_BR1/R2$ receptor;

(c) determining whether the binding of the compound known to bind specifically to the $GABA_BR1/R2$ receptor is reduced in the presence of the plurality of the compounds, relative to the binding of the compound in the absence of the plurality of compounds, and if the binding is reduced;

(d) separately determining the extent of binding to

the $GABA_BR1/R2$ receptor of each compound included in the plurality of compounds, so as to thereby identify the compound or compounds present in such plurality of compounds which specifically binds to the $GABA_BR1/R2$ receptor.--

--205. (New) A method of claim 204, wherein the cell is a mammalian cell.--

--206. (New) A method of claim 205, wherein the mammalian cell is non-neuronal in origin.--

--207. (New) The method of claim 206, wherein the non-neuronal cell is a COS-7 cell, a 293 human embryonic kidney cell, a LM(tk-) cell, a CHO cell, a mouse Y1 cell or an NIH-3T3 cell.--

--208. (New) A process for determining whether a chemical compound is a mammalian $GABA_BR1/R2$ receptor agonist which comprises contacting cells with the compound under conditions permitting the activation of the $GABA_BR1/R2$ receptor, and detecting an increase in $GABA_BR1/R2$ receptor activity, so as to thereby determine whether the compound is a $GABA_BR1/R2$ receptor agonist.--

--209. (New)A process for determining whether a chemical compound is a mammalian $GABA_BR1/R2$ receptor antagonist which comprises contacting cells containing nucleic acid encoding and expressing on their cell surface the $GABA_BR1/R2$ receptor, wherein such cells do not normally express the $GABA_BR1/R2$ receptor, with the compound in the presence of a known $GABA_BR1/R2$ receptor agonist, under conditions permitting the activation of the $GABA_BR1/R2$ receptor, and detecting a decrease in

$GABA_BR1/R2$ receptor activity, so as to thereby determine whether the compound is a $GABA_BR1/R2$ receptor antagonist.--

--210. (New) A process of claim 208 or 209, wherein the cells additionally express nucleic acid encoding GIRK1 and GIRK4.--

--211. (New) A pharmaceutical composition which comprises an amount of a $GABA_BR1/R2$ receptor agonist determined to be an agonist by the process of claim 208 effective to increase activity of a $GABA_BR1/R2$ receptor and a pharmaceutically acceptable carrier.--

--212. (New) A pharmaceutical composition which comprises an amount of a $GABA_BR1/R2$ receptor antagonist determined to be an antagonist the process of claim 209 effective to reduce activity of a $GABA_BR1/R2$ receptor and a pharmaceutically acceptable carrier.--

--213. (New) A process for determining whether a chemical compound activates a mammalian $GABA_BR1/R2$ receptor, which comprises contacting cells producing a second messenger response and expressing on their cell surface the $GABA_BR1/R2$ receptor, wherein such cells do not normally express the $GABA_BR1/R2$ receptor, with the chemical compound under conditions suitable for activation of the $GABA_BR1/R2$ receptor, and measuring the second messenger response in the presence and in the absence of the chemical compound, a change in the second messenger response in the presence of the chemical compound indicating that the compound activates the $GABA_BR1/R2$ receptor.--

--214. (New) The process of claim 213, wherein the second

messenger response comprises potassium channel activation and the change in second messenger is an increase in the level of potassium current.--

--215. (New) A process for determining whether a chemical compound inhibits activation of a mammalian $GABA_BR1/R2$ receptor, which comprises separately contacting cells producing a second messenger response and expressing on their cell surface the $GABA_BR1/R2$ receptor, wherein such cells do not normally express the $GABA_BR1/R2$ receptor, with both the chemical compound and a second chemical compound known to activate the $GABA_BR1/R2$ receptor, and with only the second chemical compound, under conditions suitable for activation of the $GABA_BR1/R2$ receptor, and measuring the second messenger response in the presence of only the second chemical compound and in the presence of both the second chemical compound and the chemical compound, a smaller change in the second messenger response in the presence of both the chemical compound and the second chemical compound than in the presence of only the second chemical compound indicating that the chemical compound inhibits activation of the $GABA_BR1/R2$ receptor.--

--216. (New) The process of claim 215, wherein the second messenger response comprises potassium channel activation and the change in second messenger response is a smaller increase in the level of inward potassium current in the presence of both the chemical compound and the second chemical compound than in the presence of only the second chemical compound.--

--217. (New) The process of claim 216, wherein the $GABA_BR1/R2$ receptor comprises a $GABA_BR2$ polypeptide which has the

same amino acid sequence as that encoded by the plasmid BO-55 (ATCC Accession No. 209104).--

--218. (New) The process of claim 216, wherein the $GABA_BR1/R2$ receptor comprises a $GABA_BR2$ polypeptide which has the same amino acid sequence as that shown in Figures 4A-4D (Seq. ID No. 4).--

--219. (New) The process of claim 216, wherein the $GABA_BR1/R2$ receptor comprises a $GABA_BR2$ polypeptide which has the same amino acid sequence as that shown in Figures 23A-23D (Seq. ID No. 47).--

--220. (New) The process of claim 216, wherein the $GABA_BR1/R2$ receptor comprises a $GABA_BR2$ polypeptide which has the same amino acid sequence as that encoded by the plasmid pEXJT3T7-hGABAB2(ATCC Accession No. 203515).--

--221. (New) The process of any one of claims 213-216, wherein the cell is an insect cell or a mammalian cell.--

--222. (New) The process of claim 221, wherein the mammalian cell is nonneuronal in origin.--

--223. (New) The process of claim 222, wherein the nonneuronal cell is a COS-7 cell, CHO cell, 293 human embryonic kidney cell, NIH-3T3 cell or LM(tk-) cell.--

--224. (New) A method of screening a plurality of chemical compounds not known to activate a mammalian $GABA_BR1/R2$ receptor to identify a compound which activates the $GABA_BR1/R2$ receptor which comprises:

(a) contacting cells containing nucleic acid encoding

and expressing on their cell surface the $GABA_BR1/R2$ receptor, wherein such cells do not normally express the $GABA_BR1/R2$ receptor, with the plurality of compounds not known to activate the $GABA_BR1/R2$ receptor, under conditions permitting activation of the $GABA_BR1/R2$ receptor;

(b) determining whether the activity of the $GABA_BR1/R2$ receptor is increased in the presence of the compounds, and if it is increased;

(c) separately determining whether the activation of the $GABA_BR1/R2$ receptor is increased by each compound included in the plurality of compounds, so as to thereby identify the compound or compounds present in such plurality of compounds which activates the $GABA_BR1/R2$ receptor.

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--225. (New) The process of claim 224, wherein the cells express nucleic acid encoding GIRK1 and GIRK4.--

--226. (New) A method of screening a plurality of chemical compounds not known to inhibit the activation of a mammalian $GABA_BR1/R2$ receptor to identify a compound which inhibits the activation of the $GABA_BR1/R2$ receptor, which comprises:

(a) contacting cells containing nucleic acid encoding and expressing on their cell surface the $GABA_BR1/R2$ receptor, wherein such cells do not normally express the $GABA_BR1/R2$ receptor, with the plurality of compounds in the presence of a known $GABA_BR1/R2$ receptor agonist, under conditions permitting activation of the $GABA_BR1/R2$ receptor;

(b) determining whether the activation of the $GABA_BR1/R2$ receptor is reduced in the presence of the plurality of compounds, relative to the activation of the $GABA_BR1/R2$ receptor in the absence of the plurality of compounds, and if it is reduced;

(c) separately determining the inhibition of activation of the $GABA_BR1/R2$ receptor for each compound included in the plurality of compounds, so as to thereby identify the compound or compounds present in such a plurality of compounds which inhibits the activation of the $GABA_BR1/R2$ receptor.--

--227. (New) The process of claim 226, wherein the cells express nucleic acid encoding GIRK1 and GIRK4.--

--228. (New) A method of any one of claims 224, 225, 226 or 227, wherein the cell is a mammalian cell.--

--229. (New) A method of claim 228, wherein the mammalian cell is non-neuronal in origin.--

--230. (New) The method of claim 229, wherein the non-neuronal cell is a COS-7 cell, a 293 human embryonic kidney cell, a LM(tk-) cell or an NIH-3T3 cell.--

--231. (New) A process for determining whether a chemical compound is a mammalian $GABA_BR1/R2$ receptor agonist, which comprises preparing a membrane fraction from cells which comprise nucleic acid encoding and expressing on their cell surface the $GABA_BR1/R2$ receptor, wherein such cells do not normally express the $GABA_BR1/R2$ receptor, separately contacting the

membrane fraction with both the chemical compound and GTPγS, and with only GTPγS, under conditions permitting the activation of the $GABA_BR1/R2$ receptor, and detecting GTPγS binding to the membrane fraction, an increase in GTPγS binding in the presence of the compound indicating that the chemical compound activates the $GABA_BR1/R2$ receptor.--

--232. (New) A process for determining whether a chemical compound is a mammalian $GABA_BR1/R2$ receptor antagonist, which comprises preparing a membrane fraction from cells which comprise nucleic acid encoding and expressing on their cell surface the $GABA_BR1/R2$ receptor, wherein such cells do not normally express the $GABA_BR1/R2$ receptor, separately contacting the membrane fraction with the chemical compound, GTPγS and a second chemical compound known to activate the $GABA_BR1/R2$ receptor, with GTPγS and only the second compound, and with GTPγS alone, under conditions permitting the activation of the $GABA_BR1/R2$ receptor, detecting GTPγS binding to each membrane fraction, and comparing the increase in GTPγS binding in the presence of the compound and the second compound relative to the binding of GTPγS alone, to the increase in GTPγS binding in the presence of the second chemical compound known to activate the $GABA_BR1/R2$ receptor relative to the binding of GTPγS alone, a smaller increase in GTPγS binding in the presence of the compound and the second compound indicating that the compound is a $GABA_BR1/R2$ receptor antagonist.--

--233. (New) The process of claim 231 or 232, wherein the $GABA_BR1/R2$ receptor comprises a $GABA_BR2$ polypeptide which has the same amino acid sequence as that encoded

by the plasmid BO-55 (ATCC Accession No. 209104).--

--234. (New) The process of claim 231 or 232, wherein the $GABA_BR1/R2$ receptor comprises a $GABA_BR2$ polypeptide which has the same amino acid sequence as that shown in Figures 4A-4D (Seq. ID No. 4).--

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--235. (New) The process of claim 231 or 232, wherein the $GABA_BR1/R2$ receptor comprises a $GABA_BR2$ polypeptide which has the same amino acid sequence as that encoded by the plasmid pEXJT3T7-hGABAB2 (ATCC Accession No. 203515).--

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--236. (New) The process of claim 231 or 232, wherein the $GABA_BR1/R2$ receptor comprises a $GABA_BR2$ polypeptide which has the same amino acid sequence as that shown in Figures 23A-23D (Seq. ID No. 47).--

--237. (New) The process of claim 231 or 232, wherein the cell is an insect cell or a mammalian cell.--

--238. (New) The process of claim 237, wherein the mammalian cell is nonneuronal in origin.--

--239. (New) The process of claim 238, wherein the nonneuronal cell is a COS-7 cell, CHO cell, 293 human embryonic kidney cell, NIH-3T3 cell or LM(tk-) cell.--

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--240. (New) The process of claim 239, wherein the compound was not previously known to be an agonist or antagonist of a $GABA_BR1/R2$ receptor.--

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--241. (New) A compound determined to be an agonist or antagonist of a $GABA_BR1/R2$ receptor by the process of claim 240.--

--242. (New) A process for making a composition of matter which specifically binds to a $GABA_BR1/R2$ receptor which comprises identifying a chemical compound using the process of any of claims 190, 197 or 204 and then synthesizing the chemical compound or a novel structural and functional analog or homolog thereof.--

--243. (New) A process for making a composition of matter which specifically binds to a $GABA_BR1/R2$ receptor which comprises identifying a chemical compound using the process of any of claims 208, 213, or 224 and then synthesizing the chemical compound or a novel structural and functional analog or homolog thereof.--

--244. (New) A process for making a composition of matter which specifically binds to a $GABA_BR1/R2$ receptor which comprises identifying a chemical compound using the process of any of claims 209, 215, or 226 and then synthesizing the chemical compound or a novel structural and functional analog or homolog thereof.--

--245. (New) The process of any of claims 242, 243, or 244, wherein the $GABA_BR1/R2$ receptor is a human $GABA_BR1/R2$ receptor.--

--246. (New) A process for preparing a pharmaceutical composition which comprises admixing a pharmaceutically acceptable carrier and a pharmaceutically acceptable amount of a chemical compound identified by the process of any of claims 190, 197 or 204 or a novel structural and functional analog or homolog thereof.--

--247. (New) A process for preparing a pharmaceutical composition which comprises admixing a

pharmaceutically acceptable carrier and a pharmaceutically acceptable amount of a chemical compound identified by the process of any of claims 208, 213, or 224 or a novel structural and functional analog or homolog thereof.--

--248. (New) A process for preparing a pharmaceutical composition which comprises admixing a pharmaceutically acceptable carrier and a pharmaceutically acceptable amount of a chemical compound identified by the process of any of claims 209, 215, or 226 or a novel structural and functional analog or homolog thereof.--

--249. (New) The process of any of claims 246, 247, or 248, wherein the $GABA_BR1/R2$ receptor is a human $GABA_BR1/R2$. receptor.--

**REMARKS**

Claims 1-17, 50, and 82 were pending in the subject application. By this Amendment applicants have canceled claims 1-17, 50, and 82 and added new claims 190-253. Accordingly, upon entry of this Amendment, claims 190-249 will be pending and under examination.

Applicants maintain the amendments to the specification and claims raise no issue of new matter and are fully supported by the specification. The amendments to the specification at page 19, 20 and 63 to include the appropriate sequence identifiers (SEQ ID NOS) are made to bring the specification of the subject application into compliance with 37 C.F.R. §1.821 through 1.825.

Applicants also submit herewith a formatted Sequence Listing in a computer readable form which complies with the requirements of 37 C.F.R. §1.824. In addition, applicants submit a Statement in